

CLAIMS

1. A cardiac pacing system for use with unipolar or bipolar atrial and ventricular pacing and sensing leads, said cardiac pacing system including:

- (a) an atrial lead having atrial electrodes electrically coupled to a cardiac pacer;
- (b) a ventricular lead having ventricular electrodes electrically coupled to said cardiac pacer;
- (c) pacing means for providing a pacing stimulus to at least one of an atrium or ventricle of a heart, said pacing means electrically coupled to at least one of said atrial lead and said ventricular lead;
- (d) sensing means for sensing a response evoked by the pacing stimulus, said sensing means electrically coupled to at least one of said atrial lead and said ventricular lead, wherein a signal associated with the evoked response is sensed between at least one of said atrial electrodes and said ventricular electrodes; and
- (e) afterpotential attenuation means for attenuating afterpotentials which result due to the application of the pacing stimulus to the heart by said cardiac pacing system, said afterpotential attenuation means being electrically coupled to said pacing means.

2. The cardiac pacing system as recited in claim 1, wherein said atrial lead includes an atrial tip electrode and an atrial ring electrode, and said ventricular lead includes a ventricular tip electrode and a ventricular ring electrode.

3. The cardiac pacing system as recited in claim 2, wherein the signal associated with the evoked response is sensed between the atrial tip electrode and an indifferent electrode positioned on a can of the cardiac pacer and electrically coupled to the cardiac pacer.

4. The cardiac pacing system as recited in claim 2, wherein the signal associated with the evoked response is sensed between the ventricular ring electrode and the ventricular tip electrode.

5. The cardiac pacing system as recited in claim 2, wherein the signal associated with

the evoked response is sensed between the atrial ring electrode and an indifferent electrode positioned on a can of the cardiac pacer and electrically coupled to the cardiac pacer.

6. The cardiac pacing system as recited in claim 2, wherein the signal associated with the evoked response is sensed between the ventricular tip electrode and an indifferent electrode positioned on a can of the cardiac pacer and electrically coupled to the cardiac pacer.

7. The cardiac pacing system as recited in claim 2, wherein the signal associated with the evoked response is sensed between the ventricular ring electrode and an indifferent electrode positioned on a can of the cardiac pacer and electrically coupled to the cardiac pacer.

8. The cardiac pacing system as recited in claim 2, wherein the signal associated with the evoked response is sensed between the atrial ring electrode and one of the ventricular electrodes.

9. The cardiac pacing system as recited in claim 2, wherein the signal associated with the evoked response is sensed between the atrial tip electrode and one of the ventricular electrodes.

10. The cardiac pacing system as recited in claim 2, wherein the signal associated with the evoked response is sensed between the ventricular ring electrode and the atrial tip electrode.

Sub 11. The cardiac pacing system as recited in claim 2, wherein the signal associated with the evoked response is sensed between the atrial tip electrode and an electrically conductive housing of the cardiac pacing system.

12. The cardiac pacing system as recited in claim 2, wherein the signal associated with the evoked response is sensed between the atrial ring electrode and an electrically conductive housing of the cardiac pacing system.

13. The cardiac pacing system as recited in claim 2, wherein the signal associated with

the evoked response is sensed between the atrial ring electrode and ventricular tip electrode.

14. The cardiac pacing system as recited in claim 2, wherein the signal associated with the evoked response is sensed between the ventricular ring electrode and an electrically conductive housing of the cardiac pacing system.

15. The cardiac pacing system as recited in claim 2, wherein the signal associated with the evoked response is sensed between the ventricular tip electrode and an electrically conductive housing of the cardiac pacing system.

16. The cardiac pacing system as recited in claim 1, wherein said afterpotential attenuation means includes first coupling capacitor means for attenuating afterpotential operatively coupled to second coupling capacitor means for blocking DC components, and also includes switching means for selectively coupling said second coupling capacitor means in series with said first coupling capacitor means so as to reduce the effective capacitance of said second capacitor means.

17. The cardiac pacing system as recited in claim 16, wherein said first coupling capacitor means has a substantially smaller capacitance than said second coupling capacitor means.

18. The cardiac pacing system as recited in claim 16, wherein said second coupling capacitor means has a capacitance ranging from 10-40 microfarads, and said first coupling capacitor means has a capacitance less than 5 microfarads.

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